1   WHAT IS CLAIMED IS:

2   1. A method of optimizing the compression rate in adaptive differential

3   pulse code modulation (ADPCM) by modifying the pulse code modulation

4   process, wherein a prognostic code converter is used to generate variable length

5   codes on top of the adaptive differential pulse code modulation (ADPCM)

6   coding, such that codes of different lengths are assigned in accordance with the

7   probability of occurrence of data bits, so as to reduce the compressed data size

8   and to increase the compression rate of the conventional ADPCM coding.

9   2. The method of optimizing the compression rate in ADPCM as claimed

10   in claim 1, wherein the prognostic code converter includes a variable length

11   encoder and a variable length decoder, wherein

12   the variable length encoder is based on the probability of occurrence of

13   data bits to convert regular ADPCM code to a new variable length code, whereby

14   that the regular pulse code with the highest occurrence rate is assigned a variable

15   length code with the shortest length, and the regular pulse code with lesser

16   occurrence rate is assigned a new code with longer length, thus replacing the

17   regular ADPCM codes; and

18   a variable length decoder works in conjunction with, the above variable

19   length encoder, working in reverse order to convert the compressed data back to

20   the pure ADPCM codes, and latter to the original audio signals for lossless audio

21   output.

22   3. The method of optimizing the compression rate in ADPCM as claimed

23   in claim 2, wherein the variable length encoder is based on the Huffman coding

24   scheme to generate new codes in accordance with the probability of occurrence

1   of data bits.